LISTING OF CLAIMS:

This listing of claims, including newly added claims 15-20, will replace all prior versions, and listings, of claims in the application:

Claim 1 (Currently Amended): A semiconductor manufacturing apparatus comprising:

an integrated measuring instrument for measuring the form or size of an element to be formed ~~into~~on a wafer;

an etching unit for etching ~~said~~the wafer by ~~making use of~~using plasma generated under reduced pressure;

an ashing unit for ashing ~~said~~the etched wafer;

a wetting unit for wetting ~~said~~the etched wafer;

a drying unit for drying the wafer which has gone through ~~said~~a wetting treatment; and

~~a~~ transport means ~~whereby the~~for transporting wafers ~~introduced into a wafer cassette are transported one by one successively~~ to ~~said~~the integrated measuring instrument and each ~~of said~~ working ~~units~~unit; ~~and~~

~~a transport chamber in which said integrated measuring instrument, etching unit, ashing unit, wetting unit, drying unit and transport means are connected by a depressurizable transport passage, and which is provided with a wafer cassette inlet for receiving a cassette containing a plural number of sheets of wafer to be etched~~

wherein depending upon an order of treatment, the etched wafer is ashed and then subjected to the wetting treatment, or the etched wafer is wetted and then subjected to an ashing treatment, and afterwards, the etched wafer is measured by

the integrated measuring instrument.

Claim 2 (Currently Amended): The semiconductor manufacturing apparatus according to claim 1, wherein ~~said~~the integrated measuring instrument measures ~~the form or size of the wafer based on the spectrum of the reflected version of light applied to the wafer~~is mounted at a position in a wafer alignment mechanism set under normal pressure to measure the form or size of an element to be formed on the wafer.

Claim 3 (Currently Amended): The semiconductor manufacturing apparatus according to claim 1, wherein ~~said~~the integrated measuring instrument ~~estimates the form of the element from the spectral distribution of the reflected version of light applied to the wafer~~ is connected to the etching unit, via a depressurized transport passage, and the wafer is measured under reduced pressure.

Claim 4 (Currently Amended): The semiconductor manufacturing apparatus according to claim 1, wherein ~~said transport means transports the wafers introduced into a wafer cassette one by one continuously to said~~the integrated measuring instrument ~~and each working unit~~is mounted at a position in a load lock chamber under reduced pressure to measure the form or size of an element to be formed on the wafer.

Claim 5 (Currently Amended): The semiconductor manufacturing

apparatus according to claim 1, wherein ~~after the working process of part of the wafers contained in the cassette has been completed, the remaining wafers in the cassette are transported successively to said~~the integrated measuring instrument ~~and each working unit by said transport means~~measures the form or size of an element to be formed on the wafer based on a spectrum of a reflected version of light applied to the wafer.

Claim 6 (Currently Amended): A semiconductor manufacturing ~~method~~apparatus comprising:

an integrated measuring instrument for measuring the form or size of the element to be formed ~~into~~on a wafer;

~~an~~ etching means for etching ~~said~~the wafer by ~~making use of~~using plasma generated under reduced pressure;

~~an~~ ashing means for ashing ~~said~~the etched wafer;

~~a~~ wetting means for wetting ~~said~~the etched wafer;

~~a~~ drying means for drying the wafer which has gone through ~~said~~a wetting ~~work~~treatment; and

~~a~~ transport means ~~whereby the~~for transporting wafers contained in a wafer cassette ~~introduced into a wafer cassette are transported~~one by one successively to ~~said~~the integrated measuring instrument for measurement and each working unit for treatment; ~~and~~

~~a transport chamber in which said integrated measuring instrument, etching means, ashing means, wetting means, drying means and transport means are connected by a depressurizable transport passage, and which is provided with a~~

~~wafer cassette inlet for receiving the cassette containing a plural number of sheets of wafer to be etched,~~

~~wherein the wafers contained in said cassette are transported one by one successively to said integrated measuring instrument and each working unit by said transport means and treated~~wherein depending upon an order of treatment, the etched wafer is ashed and then subjected to the wetting treatment, or the etched wafer is wetted and then subjected to an ashing treatment, and afterwards, the etched wafer is again measured by the integrated measuring instrument .

Claim 7 (Currently Amended): The semiconductor manufacturing ~~method~~apparatus according to claim 6, wherein, after ~~part~~ a working process of at least one of the wafers contained in ~~a~~the wafer cassette ~~have~~has been ~~finished with the treating process~~completed, the ~~remaining wafers in said cassette are transported successively to said~~processed wafer is measured by the integrated measuring instrument, ~~and each treating~~the etching unit ~~by said transport means~~is controlled based on a measured value, and the remaining wafers are processed one by one successively.

Claim 8 (Currently Amended): The semiconductor manufacturing ~~method~~apparatus according to claim 6 or 7, wherein ~~said~~the form or size of the element on the pre-etched wafer transported into the integrated measuring instrument ~~measures the form or size of the pre-treatment wafers carried into said metrology~~is measured, and the etching means is controlled based on such measurements~~makes optimum control of the etching means based on said~~

~~measurements~~.

Claim 9 (Currently Amended): The semiconductor manufacturing ~~method~~apparatus according to claim 6 or 7, wherein ~~said integrated measuring instrument measures~~ the form or size of the element on the post-treatment ~~wafers carried into said metrology, and makes optimal control of~~ wafer transported into the integrated measuring instrument is measured, and the etching means is controlled based on ~~said~~such measurements.

Claim 10 (Currently Amended): The semiconductor manufacturing ~~method~~apparatus according to claim 6 or 7, wherein ~~said integrated measuring instrument measures~~ the form or size of the element on the pre-etched and ~~post-treatment wafers carried into said metrology, and make optimal control of~~post-etched wafer transported into the integrated measuring instrument is measured, and the etching means is controlled based on the difference of ~~said~~such measurements.

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Claim 11 (Currently Amended): The semiconductor manufacturing ~~method~~apparatus according to claim 6 or 7, wherein ~~said~~the integrated measuring instrument ~~makes judgment on~~determines whether to continue or stop the etching ~~work~~ based on ~~the~~ measurements of the form or size of the ~~wafers~~element on the wafer.

Claim 12 (Currently Amended): The semiconductor manufacturing

~~method according to any one of claims 6 to 8~~apparatus according to claim 1, wherein ~~said transport means transports the wafers to the ashing means antecedently to the wetting means~~ the integrated measuring instrument estimates the form or size of the element to be formed on the wafer from a spectral distribution of a reflected version of light applied to the wafer.

Claim 13 (Currently Amended): The semiconductor manufacturing ~~method~~apparatus according to ~~any one of claims 6 to 8~~claim 1, wherein, after a working process of at least one of the wafers has been completed, the processed wafer is measured by the integrated measuring instrument, and the etching unit is controlled based on measured values, and the remaining wafers are processed one by one successively ~~said transport means transports the wafers to the wetting means antecedently to the ashing means~~.

Claim 14 (Currently Amended): The semiconductor manufacturing ~~method~~apparatus according to claim 7, wherein ~~said~~the integrated measuring instrument measures the form or size of ~~part of~~an element on the ~~wafers~~wafer which ~~have~~has completed ~~the~~ treatments, and ~~make~~makes optimum control of the etching means based on ~~said~~such measurements.

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Claim 15 (Newly Added): An apparatus for processing a wafer comprising:

an optical measuring instrument arranged to measure a dimension of a structure to be formed on a wafer;

an etching unit arranged to etch the wafer, via a mask pattern, to form a structure on the wafer, using plasma generated under reduced pressure, based on an etching condition;

an ashing unit arranged to remove the mask pattern from the wafer after etching;

a wetting unit arranged to wet the wafer so as to remove undesirable corrosive substance produced by etching, including any protective film deposited on a sidewall of the structure on the wafer;

a drying unit arranged to dry the wafer after wetting; and

a transport mechanism for transporting individual wafer from a batch placed in a wafer cassette through the optical measuring instrument, the etching unit, the wetting unit and the drying unit;

wherein, depending upon an order of treatment, the wafer after etching is ashed, via the ashing unit, and then subjected to wetting, via the wetting unit, or, alternatively, the wafer after etching is wetted, via the wetting unit, and then subjected to ashing, via the ashing unit, and afterwards, the structure on the wafer is again measured at the optical measuring instrument for any abnormality such that the etching condition can be optimized for measurement of a next wafer in the batch placed in the wafer cassette.

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Claim 16 (Newly Added): The apparatus according to claim 15, wherein the optical measuring instrument measures is mounted at a position in a wafer alignment mechanism set under normal pressure to measure the form or size of a structure to be formed on the wafer.

Claim 17 (Newly Added): The apparatus according to claim 15, wherein the optical measuring instrument is connected to the etching unit, via a depressurized transport passage, and the wafer is measured by the optical measuring instrument under reduced pressure.

Claim 18 (Newly Added): The apparatus according to claim 15, wherein the optical measuring instrument is mounted at a position in a load lock chamber under reduced pressure to measure the form or size of a structure to be formed on the wafer.

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Claim 19 (Newly Added): The apparatus according to claim 15, wherein the optical measuring instrument measures the form or size of a structure on the wafer based on a spectrum of a reflected version of light applied to the wafer.

Claim 20 (Newly Added): The apparatus according to claim 15, wherein the optical measuring instrument measures the form or size of a structure on the wafer which has completed treatments, and adjusts the etching condition for the etching unit based on such measurements.